

ALIB Composite Ltd. (Extension)

Vannara, Mouchak, kaliakoir, Gazipur

(24.036239, 90.296821)

14 November 2023



1. Building information

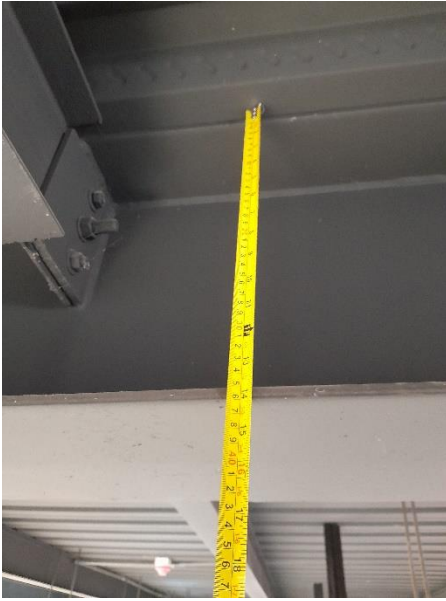
Main Building: Two (G+1) storied steel buildings.

Utility Building: Two storied reinforced concrete (RC) building.

Security Room: Single storied (RC) building

2. Observations:

Observation-1: Lack of Design Documents (Main Building)



Description of observation: During inspection, a set of as-built drawings was found but full set of design documents was not available. Mismatch found between the as-built drawing and actual site condition. The depth of the main beam was found 360mm instead of 375mm at several locations. Also, the size (depth & thickness) of the steel columns were found less in size than as-built drawing in few locations.

As per BNBC, every building or structure designed shall have its design documents prepared in accordance with the provision of Section 1.9.1. The design document shall include a design report, and a set of structural drawings, which shall be prepared in compliance with section 1.9.1.1 and section 1.9.1.2 as per BNBC. Building engineer is required to survey the whole structure and prepare accurate as built drawing as well as the design documents including design report based on FEA model in compliance with section 1.9.1 (part-6, BNBC).

Observation-2: Corrosion in steel section (Main Building)



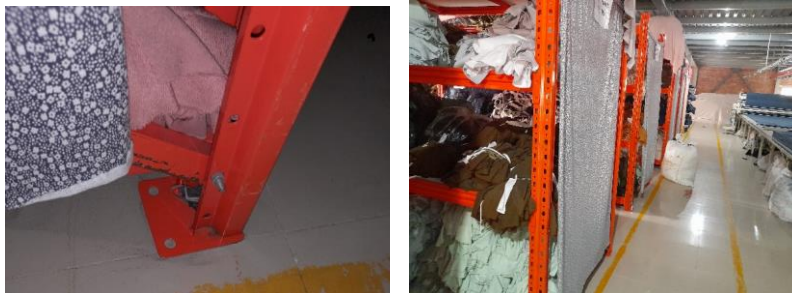
Description of observation: Corrosion was found in the steel members. Building Engineer is required to repair the corroded areas and take necessary actions to protect the steel members from corrosion.

Observation-3: Connection Gap in Steel joints (Main Building)



Description of observation: Significant gaps was observed at column-rafter, Rafter-Rafter and other joints at several locations. Building engineer is required find out all the locations and carry out suitable remedial works.

Observation-4: Non-structural elements not anchored or braced (Main Bulidng)



Description of observation: Racks on different floors are not adequately anchored or braced to resist lateral (earthquake) forces. Building is required to adequately anchor and brace all non-structural elements to resist earthquake forces to comply with the BNBC.

Observation-5: Lack of Design Documents (Utility Building)



During inspection, a set of as-built drawings was found but full set of design documents was not available. Mismatch found between the as-built drawing and actual site condition. The down-stand depth of the beam was found 300mm instead of 250mm at several locations.

Also, an adequate number of the cylinder test report was not available.

As per BNBC, every building or structure designed shall have its design documents prepared in accordance with the provision of Section 1.9.1. The design document shall include a design report, and a set of structural drawings, which shall be prepared in compliance with section 1.9.1.1 and section 1.9.1.2 as per BNBC. Building engineers are required to survey the whole structure and prepare accurate as built drawing as well as the design documents including design report based on FEA model in compliance with section 1.9.1 (part-6,BNBC).

Observation-6: Dampness at several locations (Utility Building)



Description of observation: Dampness and vegetation were found at several locations of the structures. Factory is required to investigate the source of the dampness, repair dampness and take necessary action to avoid dampness.

Observation-7: Non-structural elements not anchored or braced (Utility Bulidng)



Description of observation: PVC water tank at roof of Utility building are not adequately anchored or braced to resist lateral (earthquake) forces. Building is required to adequately anchor and brace all non-structural elements to resist earthquake forces to comply with the BNBC.

3. Action Plan:

Observation	Action Plan	Timeline
Lack of design documents. (Main Building)	Building engineer to prepare the design document including a design report, and a set of structural drawings in compliance with section 1.9.1.1 and section 1.9.1.2 as per BNBC.	within 6 weeks
	Carry-out remedial works where required.	within 6 months
Corrosion in steel section. (Main Building)	Factory is required to take necessary actions to protect the steel members from corrosion.	within 6 weeks
Connection gap at steel joints. (Main Building)	Identify the locations and carryout suitable repair works where necessary.	within 6 weeks
Non-structural elements not anchored or braced. (Main Building)	Building engineer is required to adequately anchor and brace all non-structural elements to resist earthquake forces to comply with the BNBC.	within 6 weeks
Lack of design documents. (Utility Building)	Building engineer to prepare the design document including a design report, and a set of structural drawings in compliance with section 1.9.1.1 and section 1.9.1.2 as per BNBC.	within 6 weeks
	Provide adequate cylinder test report to satisfy the frequency of test as per BNBC verify in-situ concrete stresses by 100mm dia. cores from minimum of 4 columns & beam.	within 6 weeks
	Carry-out remedial works where required.	within 6 months
Dampness at several locations. (Utility Building)	Building Engineer is required to investigate the reason of dampness & apply suitable method to repair dampness.	within 6 weeks
Non-structural elements not anchored or braced. (Utility Building)	Building engineer is required to adequately anchor and brace all non-structural elements to resist earthquake forces to comply with the BNBC.	within 6 weeks

Survey Limitations and Assumptions

This report is for the private and confidential use of RSC for whom it was prepared together with their professional advisors as appropriate. It should not be reproduced in whole or in part or relied upon by third parties for any use without the express written permission of RSC.

This report can be used in discussion with the supplier or factory owner as a means to rectify or address any observations made. The report is not comprehensive and is limited to what could be observed during a visual inspection of the building.

This Report is not intended to be treated as a generalized inspection and does not cover the deterioration of structural members through dampness, fungal or insect attack, nor does it deal with problems and defects of a non-structural nature. Other non structural aspects of the building such as fire safety have not been assessed in this survey.

Except as otherwise noted, drains and other services were not viewed or tested during our inspection and are therefore similarly excluded from this Report. We have not inspected any parts of the structure which are covered, unexposed or inaccessible and we are therefore unable to report that any such part of the property is free from defect.

External inspection of the façade walls has generally been carried out from ground level only by visual sighting. No opening up works were carried out (except as noted) and we rely on the Architects and Engineers drawings provided to us for our views on concealed parts of the structure and in particular foundations. Strengths of materials and components are untested and we recommend that the factory owners Building Engineer carries out in situ testing over and above those suggested to satisfy themselves with the material strengths and component details.

Recommendations, where given, are for the purpose of providing indicative advice only, are not exhaustive, relate solely to identifying key and obvious structural defects as identified in this presentation, and do not take the form of or constitute a specification for works. We take no responsibility for the works as constructed. This report does not interfere with the factory owners Building Engineers responsibility for the structural performance of this building, The Building Engineer remains fully responsible for the structural adequacy of the building.

This report does not comment in detail on the future seismic performance of the building and only highlights the fact that the building may experience significant damage or collapse in a seismic event along with many others in the Dhaka region.

The observations in this report are based on the Engineering Judgement of the lead surveyor/engineer at the time of the survey. We assume in making these observations that no covering up of faults defects, filling or plastering over cracking or significant repair work has been carried out by the building owner. Any future alteration or additional work by the building owner will void this report.